



DVC-1000



i2eye™

(Patent Pending)

Express EtherNetwork™

Broadband VideoPhone

Manual

v2.0

D-Link

Building Networks for People

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Introduction

Imagine having high-quality, extremely low-cost video conferencing from a stand-alone, easy to use communication appliance. The **D-Link i2eye™ DVC-1000 Broadband VideoPhone** accomplishes this. **D-Link i2eye™** introduces the world of video conferencing over the Internet, to bring you and your family, friends and colleagues together, in real time, anytime! The previously complicated process of conducting a video conference is simplified with the **i2eye™ DVC-1000**. Since the **DVC-1000** is a stand-alone device, you do not need a computer to video conference over the Internet. The **i2eye™ DVC-1000** is such a revolutionary leap in technology that D-Link calls it a VideoPhone. Connect a television for viewing, an optional standard telephone for privacy, plug in a standard Ethernet network cable connected to your broadband Internet connection and you are ready to use your **i2eye™ DVC-1000 VideoPhone**.

Using advanced video compression technology, the **i2eye™ DVC-1000 VideoPhone** maximizes the image and audio quality within the available bandwidth. It is an ideal solution for consumers and small businesses with high-speed broadband Internet access. There is no delay in waiting for a PC to boot up before using your **i2eye™ DVC-1000 VideoPhone**, and you don't have to be a computer expert. Using the Internet, in place of conventional dial-up phone lines, maximizes your existing broadband investment. The remote control included with the **i2eye™ DVC-1000** makes it easy to answer an incoming videoconference call or dial out to initiate your own videoconference. The built-in caller ID provides privacy protection. You know who is calling before you answer and the audio or video can be turned off whenever desired.

This manual provides the instructions to install and use your **D-Link i2eye™ DVC-1000 Broadband VideoPhone**. Please take a moment to get acquainted with this manual to make your VideoPhone experience go as smoothly as possible.

Package Contents



- **D-Link i2eye™ DVC-1000 Broadband VideoPhone**
- Power Adapter
- Instruction Manual
- Quick Installation Guide
- Remote Control
- Standard Composite RCA Audio / Video Cable
- Cat 5 RJ-45 Ethernet Cable

Note: Using a power supply with a different voltage than the one included with the DVC-1000 will cause damage and void the warranty for this product.

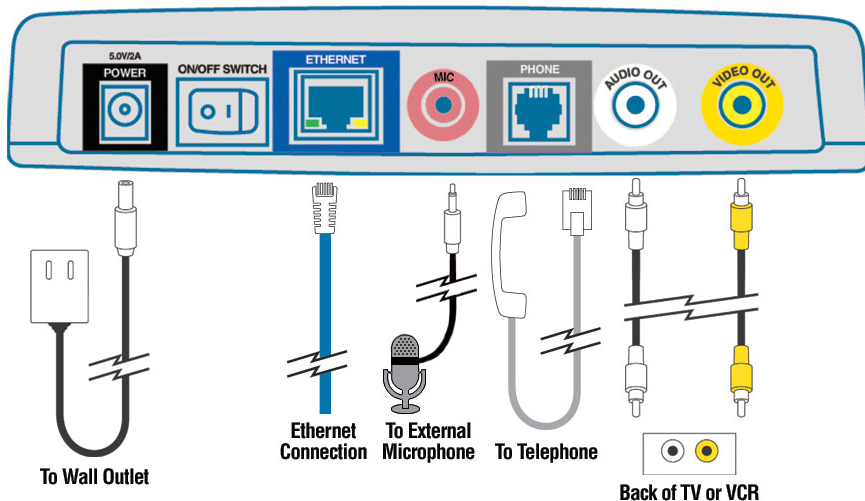
System Requirements

- Connection to broadband Internet (Cable modem, DSL modem, T-1 or Ethernet network) at each end of the connection
- Television with standard composite audio and video inputs (RCA jacks) or with a RF modulator to enable a TV without AV jacks to be connected with the antenna terminal
- **Optional:** Standard telephone (but recommended)
- **Optional:** You can connect the **i2eye™ DVC-1000** to a PC equipped with a video capture device that allows input of standard composite video (using RCA Jacks)
- **Optional:** An external microphone can be connected to the pink **Mic** port on the rear of the device for improved audio quality when a group of people are originating the **i2eye™ DVC-1000** call.

Features & Benefits

- Stand-alone operation - No computer needed
- Uses broadband cable/DSL or network connections for high-quality video
- H.323 Internet video-conferencing standard compliant
- Easy to use
- Use your existing broadband network
- Easy Setup Wizard
- Picture-in-Picture view or full-screen view
- Remote control included
- Speed Dialing
- Advanced video and audio privacy protection
- Built-in Caller ID
- Auto mapping of IP Address
- Answer incoming calls using telephone or remote control
- Video and / or audio mute
- Adjustable tilt and focus lens
- Up to 30 frames per second
- High quality 352 x 288 resolution
- Automatic detection of system upgrades
- 1 Year Warranty

Connections



LEDs

LED stands for **L**ight-**E**mitting **D**iode. The **i2eye™ DVC-1000** has the following LEDs for monitoring its operation.



LED	LED Location and Activity
Power	Front, far right. A green light indicates the i2eye™ DVC-1000 is ON.
Status	Front to the left of the power light. This light turns on briefly at power up. It is then off during normal operation.
Call Monitor	Front, left side of lens. Steady red light indicates video is being sent.
Link Status	Back, right. Steady green light indicates the network connection is good.
Activity	Back, left. Steady or blinking yellow light indicates the i2eye™ DVC-1000 is transmitting data.

Getting Started

BEFORE YOU BEGIN!

Read **Using the DVC-1000 with Routers, Gateways or Broadband Modems** on page 33 in this manual *if you are using the DVC-1000 VideoPhone with a Router, Gateway or Broadband Modem.*

The DVC-1000 needs to be set-up before use. Use the **Quick Installation Guide** (included with the DVC-1000) to perform the hardware installation. Each cable (video, audio, Ethernet and AC power) supplied for the **i2eye™** has a different color on the end that connects to the DVC-1000. Plug the cables into the matching color coded connector on the back of DVC-1000. You can also plug the optional telephone and/or external microphone into the DVC-1000. To help you with these connections, there is an illustration on the bottom of the unit.

There is an easy to use **Setup Wizard** built-in to the DVC-1000 to accomplish the set-up. You will need to enter your name, your phone number and your Internet connection information in order to use your VideoPhone.

Using the Remote Control

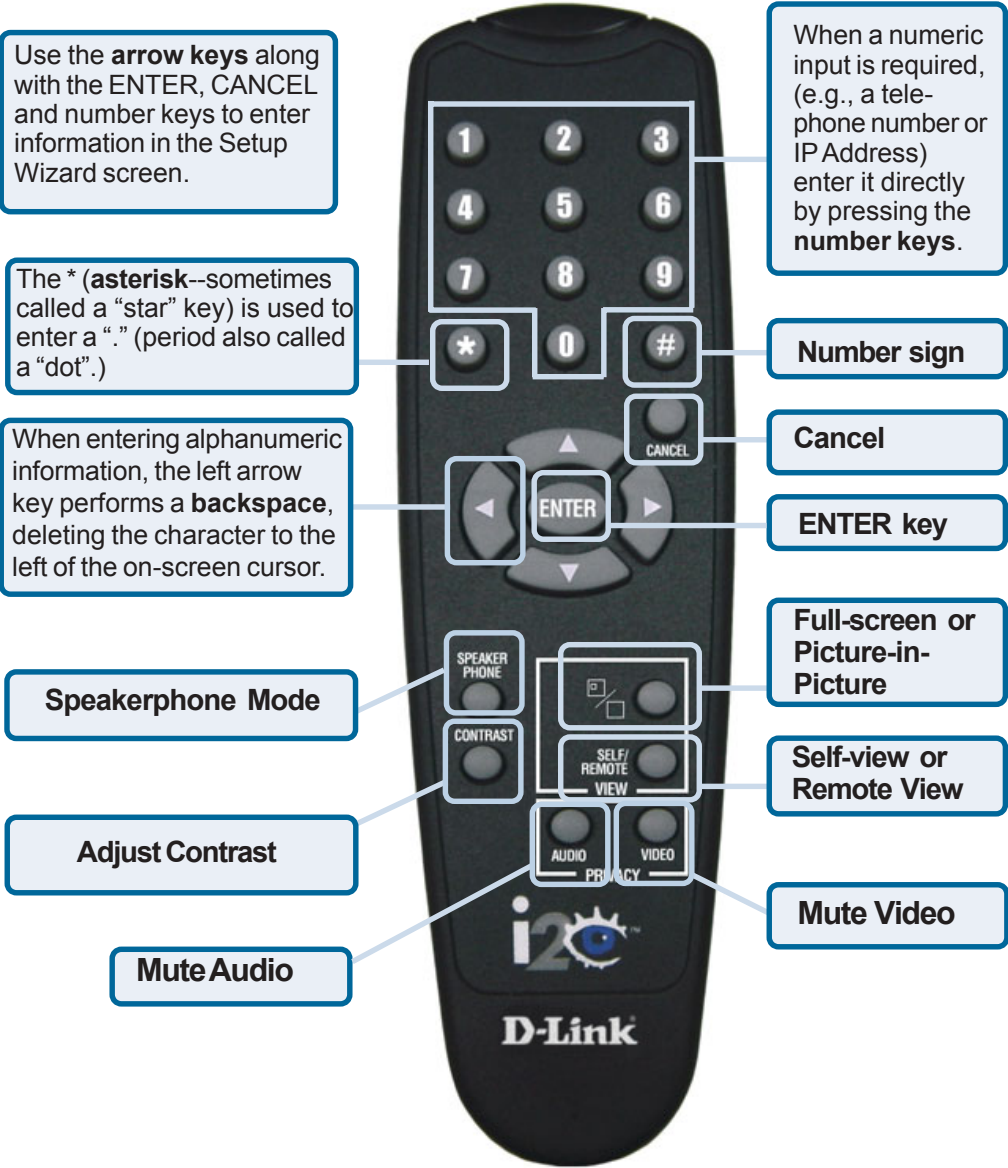
Information for the Setup Wizard is entered by using the intelligent remote control included with the DVC-1000. The remote is used to enter numbers, letters, special characters and to make selections from an on-screen keyboard. The on-screen keyboard is activated by pressing ENTER on the remote control. The on-screen keyboard is only activated in a field where text is required.

You will use the arrow keys on the remote control along with the ENTER, CANCEL and number keys to enter information in the Setup Wizard screens.

Where a numeric input is required, such as a telephone number or IP address, enter it directly by pressing the number keys. The * (asterisk--sometimes called a "star" key) is used to enter a "." (period also called a "dot".)

When you are entering alphanumeric information, the left arrow key performs a backspace, deleting the character to the left of the cursor. The following page contains a breakdown of the features of the remote control.

Remote Control Layout



Using the On-Screen Keyboard

The DVC-1000 uses a keyboard that appears on-screen to enter words or alphanumeric characters into the Setup Wizard screens. When the cursor is located in a setup screen that requires characters to be entered, press the ENTER key to bring up the on-screen keyboard.

The keyboard will only appear if the cursor is located in an area of the screen that allows text or numbers to be entered.

To enter text use the arrow keys on the remote control to move the cursor to the required character. Press the **ENTER** key on the remote control to actually put the character on the screen. Continue entering characters until you have “typed” the characters that are needed.



When you are finished entering text and numbers, move the cursor to highlight **OK** on the screen and press **ENTER**; or alternatively you can press the **CANCEL** key on the remote to remove the keyboard from the screen, leaving what you typed on the screen.

The keyboard allows entering any of the following:

- Numbers 0 through 9
- Upper case Letters A through Z
- Lower case letters a through z
- Special characters: period (.), dash (-), colon (:), at sign (@), space, backspace (to delete a character to the left), comma (,) , and a slash (/).

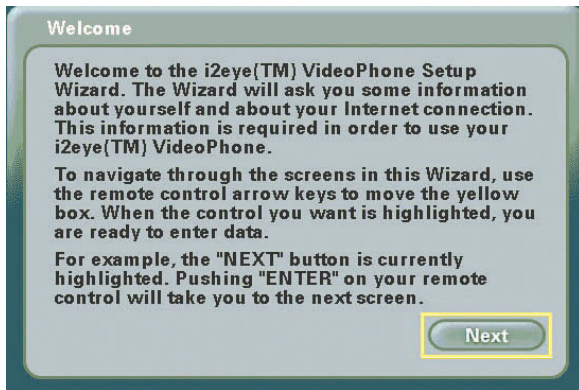
When you are entering letters, the first letter entered is automatically entered as UPPER case. The bottom left “arrow” on the screen is a Shift key. This allows you to change from UPPER to lower case. The keypad features “wraparound” capability. Pressing continuously on the “right” arrow will navigate you through all the rows of the alphabet.

Using the Setup Wizard

The following descriptions of the **Setup Wizard** screens will help you understand the purpose and procedures for providing the required information.

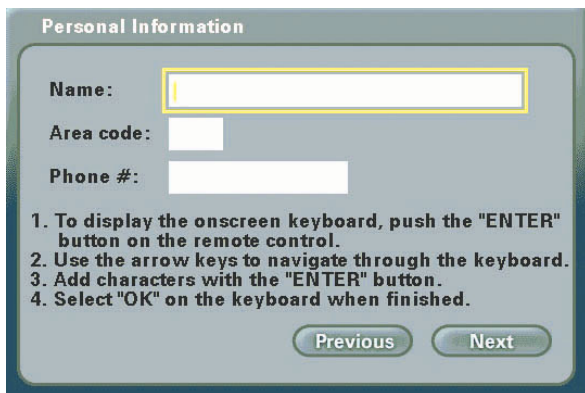
Welcome Screen

The first screen that displays on the initial startup is the **Welcome Screen**. This screen explains what information is needed to complete the setup and also explains how to use the remote control to navigate through the **Setup Wizard**. Press **ENTER** on the remote control to continue to the next screen.



Personal Information Screen

This is where you enter your name, area code and phone number. The bottom of the screen has instructions on using the on-screen keyboard.



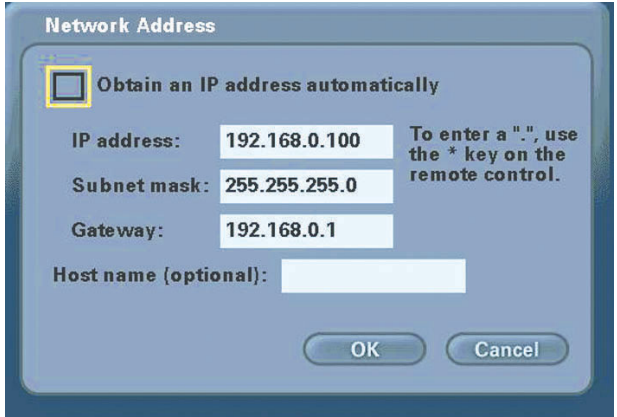
After the information is entered highlight the **NEXT** button and press **ENTER** on the remote control to continue.

The phone number you enter is one you create for family, friends and others to call you. You can use your regular phone number or make up a new one. Only your name will be displayed at the other end of the video call. Your phone number will not be visible to anyone else.

Using the Setup Wizard (continued)

Network Address Screen

The **Network Address** screen asks for information that is needed to connect a VideoPhone call over the Internet. Most home users with a cable or DSL modem can leave the checkbox checked to obtain an IP Address automatically.



If you know you cannot be assigned an IP Address automatically through a DHCP server, then uncheck the checkbox and enter your **IP Address**, **Subnet mask** and **Gateway**.

Obtain an IP Address automatically (Default)

The application will attempt to obtain the IP Address from the DHCP server. When this is checked, the other settings on this screen are automatically grayed. Also, if this setting is checked, you will skip the **DNS screen**, described on the next page, as the DNS will be set automatically.

IP Address, Subnet mask, Gateway

If necessary, enter each of these settings for the DVC-1000. You will be able to obtain the IP Address, subnet mask and gateway address from your router configuration settings, ISP or network administrator.

Host name (optional):

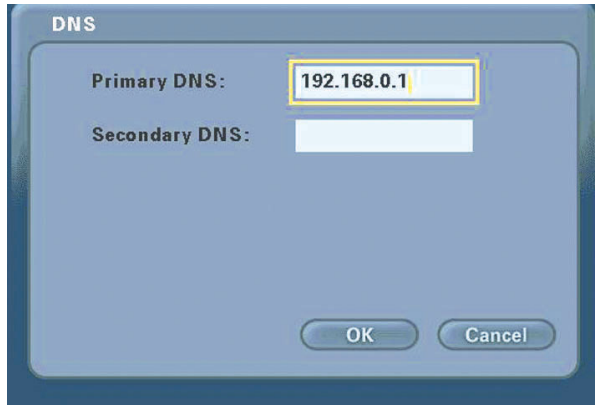
Your Internet Service provider may require you to provide a host name to connect to the Internet. If this is required you can enter it here. Today, this is rarely required on a broadband connection and this setting is optional.

Press **OK** to continue.

Using the Setup Wizard (continued)

DNS (Domain Naming System) Screen

If you entered an IP address in the **Network Address** screen (described on the previous page) you will see the screen for setting DNS server addresses. The DNS screen asks for information regarding the Domain Name System (DNS) server.



DNS

Primary DNS: 192.168.0.1

Secondary DNS:

OK Cancel

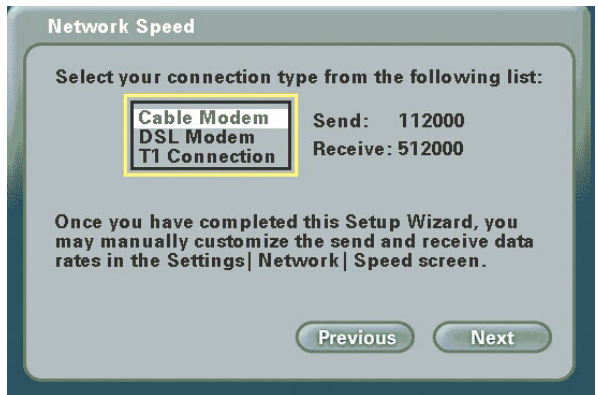
You should be able to get both of these settings from your router configuration settings, ISP or your network administrator. Only the primary DNS server address is required, though it is best to have both the primary and secondary addresses.

Press **OK** to continue.

The Domain Name System (DNS) translates Internet domain names (for example www.dlink.com, which is easy for humans to use and remember) to IP Addresses, which are what computers use to find each other on the Internet.

Network Speed Screen

The **Network Speed** screen asks you to select the type of broadband Internet connection you use. Each choice has default *send* and *receive* speeds defined for you. If you need to change these settings after completing the **Setup Wizard**, this can be done by selecting the **Settings > Network > Speed** screen.



Network Speed

Select your connection type from the following list:

Cable Modem Send: 112000
DSL Modem Receive: 512000
T1 Connection

Once you have completed this Setup Wizard, you may manually customize the send and receive data rates in the Settings | Network | Speed screen.

Previous Next

Press **Next** to continue.

Using the Setup Wizard (continued)

System Restart

A warning message now appears asking to restart the DVC-1000 VideoPhone to complete the setup. Press the **Yes** button to accomplish a restart.



Congratulations! You are now ready to make and receive i2eye VideoPhone calls.

Using a Telephone with the DVC-1000

Although optional, it is recommended that you connect a standard telephone to the DVC-1000 VideoPhone.

The telephone that you use for the DVC-1000 VideoPhone will not be connected to your phone jack. You will use the telephone as a means of conducting and receiving calls over the Internet only.

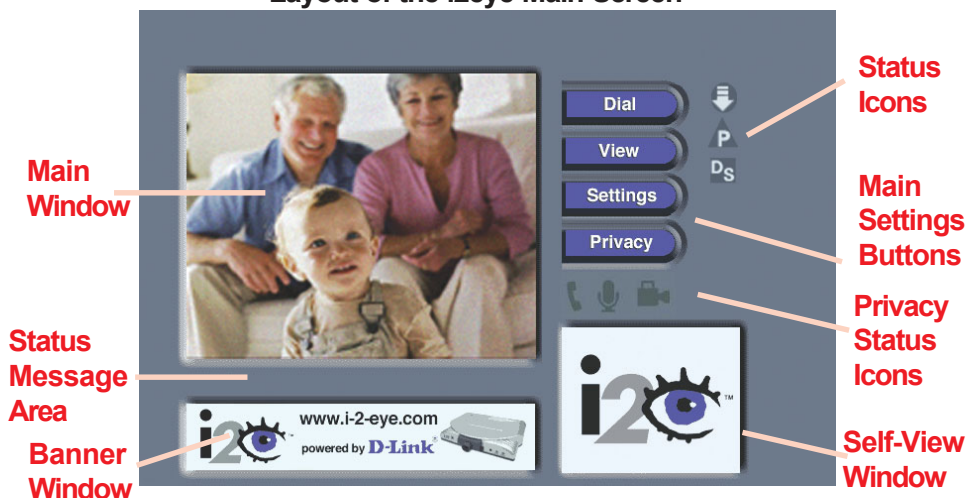
The telephone handset is used to place video calls just as you would with a regular phone call. You dial a VideoPhone number to reach a party on the other end of the VideoPhone call. You can speak through the telephone, listen to the other party in privacy, and even switch to the **Speakerphone Mode** on the DVC-1000 to share the audio with others. This can all be controlled by the remote control. When the phone is picked up, the microphone is muted.

If the VideoPhone number you are calling has a different area code, you will need to dial a "1", the 3-digit area code and the 7-digit number. The DVC-1000 requires using a "1" in calls outside your area code to correctly look up the phone number.

If you are calling within the same area code, you will only dial the 7-digit number.

Using the DVC-1000

Layout of the i2eye Main Screen



After you have correctly setup the i2eye VideoPhone using the **Setup Wizard** you will see the above **Main Screen** each time you turn on the VideoPhone. There is a larger **Main Window** that displays the self-view until a call is connected and then displays the party you are calling. The smaller **Self-View Window** then displays the self-view when a call is connected. The self-view is a cropped image of what the other party is actually seeing. To flip the images that are in the **Main Window** and **Self-View Window** press the **Self/Remote** button on the remote control.

Status Icons

The Status Icons appear only briefly at startup. The DVC-1000 uses icons to indicate its status. The icons display on the top right side of the **Main Screen**. If an icon is displayed, this indicates the operation is not complete. The icon will disappear after the operation completes. If the icon appears with a yellow "X" through it, this means the operation was unsuccessful. If the **Directory Service** status icon is displayed with an "X" through it, you can still make videophone calls by inputting the IP Address of the phone that you are calling. (See the **Manual Dial** screen on page 20.) This is a list of the status icons:



Looking for i2eye updates



Obtaining the Public IP Address (Router's Address)









DVC-1000 is registering with the Directory Service

Using the DVC-1000 (continued)

Privacy Status Icons

*Privacy Status Icons appear on the Main Screen.
Please see the previous page for an illustration.*

Audio		If you select Audio Privacy in Privacy Settings window, the other party will not hear you and the audio icon will appear with a slash through it.	
Video		If you select Video Privacy in Privacy Settings window, the other party will not see you and the video icon will appear with a slash through it.	
Do Not Disturb		If you select Do Not Disturb in Privacy Settings window, the other party will not see you and the video icon will appear with a slash through it.	

Answering an Incoming VideoPhone call

Just like a regular phone call, picking up the telephone handset will answer the DVC-1000 VideoPhone. You may also use the remote control to answer by pressing the ENTER key when the “**Answer**” button on the screen is highlighted in a dialog box.

If the telephone attached to your DVC-1000 VideoPhone is a cordless model, press TALK on your phone to accept the call.

Placing a Speed-dial VideoPhone Call with the Telephone Handset

- 1** Pick up the telephone handset.
- 2** The DVC-1000 VideoPhone senses the telephone is off the hook and a prompt appears on the screen asking you to either enter a phone number or press # key to select the speed dial list.
- 3** The speed dial menu appears, displaying the speed dial number assigned to the party you want to call. Press the speed dial number on the handset.
- 4** The DVC-1000 VideoPhone rings while you wait for your call to be answered by the party on the other end of the call.
- 5** When the other party answers, the VideoPhone call is connected.

Using the DVC-1000 (continued)

Placing a Manual Dial VideoPhone Call with the Telephone Handset

- 1 Pick up the telephone handset.
- 2 The DVC-1000 VideoPhone senses the phone is off the hook and a prompt appears on the screen asking you to either enter a phone number or press # key to select the speed dial list.
- 3 Enter the phone number in the DVC-1000 VideoPhone just as you would if you were using a regular phone.
- 4 The DVC-1000 VideoPhone rings while you wait for your call to be answered by the party on the other end of the call.
- 5 When the other party answers, the VideoPhone call is connected.

If the other party has activated their video privacy, you will not see them; but you will be able to hear them. If they have activated audio privacy, you can see them; but not hear them. If you have activated your video or audio privacy, the other party will not see or hear you.

Placing a Manual Dial VideoPhone Call Using the Remote

- 1 From the DVC-1000 VideoPhone Main Menu, select DIAL. The speed dial list appears on the screen.
- 2 Navigate with the arrow keys to **Manual Dial** and press ENTER.
- 3 You can enter a phone number if you and the party you are calling are connected to the directory service, or you can enter an **IP address** (See page 18 for an example of an IP address). If you are not connected to the directory service, the phone number box will be grayed out on your screen.
- 4 Enter the phone number or IP address and select **Dial**.
- 5 You will hear ringing while you wait for your call to be accepted.

Using the DVC-1000 (continued)

Speakerphone Mode

The DVC-1000 has a **Speakerphone Mode** if the call needs to be shared with more than one person, or when it is desirable to talk without using the telephone handset. In Speakerphone Mode, the speaker on the television and the microphone in the DVC-1000 VideoPhone are used.

When a call is answered using the remote control, or a call is placed using the remote control, the DVC-1000 VideoPhone is automatically in Speakerphone Mode.

Speakerphone mode is a half-duplex audio mode, which means that only one end of the call may talk at a time. If you are talking, you will not hear the person on the other end. Because half-duplex allows only one side to talk at a time, if you are in a loud environment, you will have difficulty hearing the other side because the loud side stays active, and audio may not come through from the other side.

Making a Speakerphone Call into a Private Call

If you are sharing a VideoPhone call with a group using the Speakerphone Mode and wish to conduct a private conversation, pick up the telephone handset and turn down the audio on the television. The others in the group will not be able to hear the conversation.

Making a Private Call into a Speakerphone Call

If a VideoPhone call is in progress using the telephone handset, Speakerphone mode can be enabled:

- 1 Press the **Speakerphone** button on the DVC-1000 remote control.
- 2 When the dialog appears on the video display telling you to hang up the phone, go ahead and hang up the phone.
- 3 Speakerphone mode is now active.

When in Speakerphone mode, you should face the DVC-1000 VideoPhone unit when you speak so the microphone will pick up all your words. Speak louder as you move further from the microphone. The recommended distance from the microphone in speakerphone mode is 6 to 8 feet.

If Speakerphone mode is not enabled by pressing the 'Speakerphone' button on the remote control, hanging up the handset will hang up the video call.

Using the DVC 1000 (continued)

Entering Phone Numbers

Phone numbers may be entered in the following formats (the dash is entered automatically):

1-949-555-1212: The 1 is required if you are calling outside your local area.

555-1212: Will work only within the local area code.

The local area code is specified in the Settings > Personal Info screen.

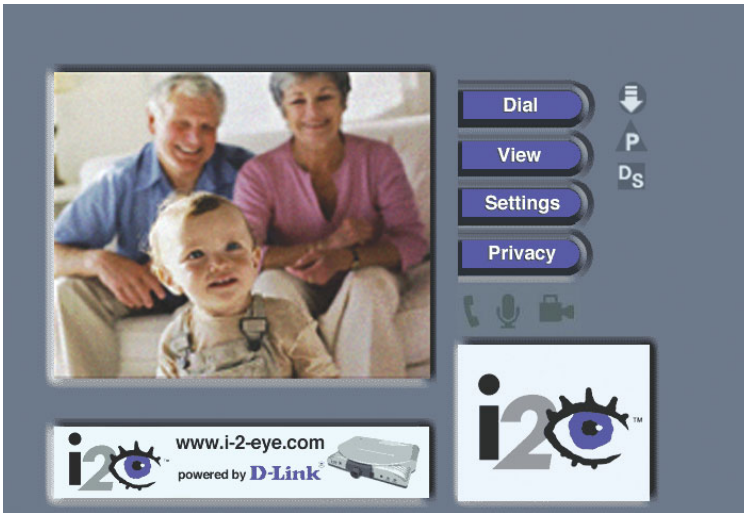
Entering IP Addresses

Valid entry for the IP address field would include:

205.104.32.20 (Dials a VideoPhone, or other H.323 videoconferencing device, at this IP address)

Using the Configuration Menu

Main Screen



After starting the DVC-1000 VideoPhone, the Main Screen is displayed. The self-view image should be displaying in the larger window.

The following buttons reside on the main screen:

- Dial -** Set up a speed dial list and choose from several methods of placing a call to other VideoPhones. You may choose to manually make a call with either another i2eye VideoPhone number, enter an IP Address, or select an entry on the speed dial list.
- View -** Allows you to specify what is seen on the main application screen. Choose full screen view or the default view, as well as Internet connection status.
- Settings -** Change settings relating to video calls, personal information and network information.
- Privacy -** Select from several methods of audio and video privacy.

*If this warning screen appears, click **OK** and you will be shown the IP Address configuration screen. Manually input the IP Address. You can also check the Troubleshooting Section in this manual for more information.*



Using the Configuration Menu (continued)

Main Screen > Dial

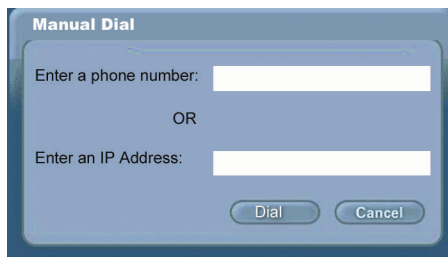


The Dial screen contains the speed dial list as well as buttons to manage the Speed Dial List and make manual VideoPhone calls

Speed Dial List - This list contains up to 10 Speed Dial entries. Click the **Add** button to add to this list. A name is dialed by highlighting the item and pressing the ENTER button on the remote.

Manual Dial - Allows the manual dialing of another user by telephone number or IP Address. When you click **Manual Dial** in the screen above, the window below will appear.

To enter the number or address, use the remote's number pad or the on-screen keyboard.

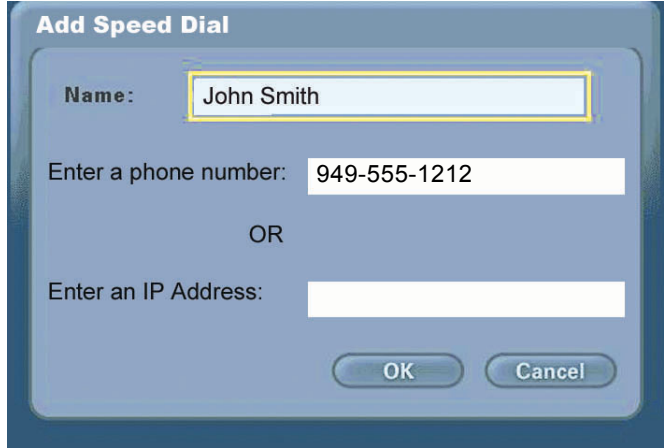


Click **Dial** to start the VideoPhone call.

Using the Configuration Menu (continued)

Main Screen > Dial (continued)

Add - To add a **Speed Dial** entry, enter a name and a number (or address) using the remote's number pad or the on-screen keyboard.



Add Speed Dial

Name: John Smith

Enter a phone number: 949-555-1212

OR

Enter an IP Address:

OK Cancel

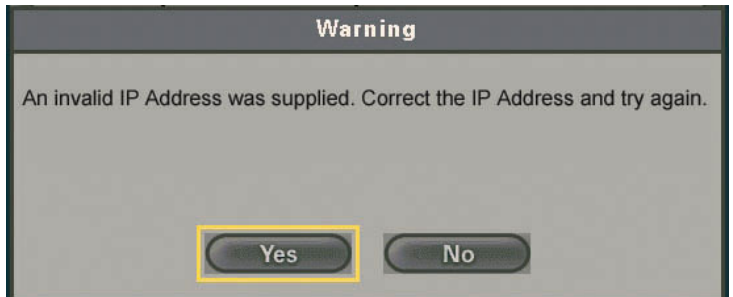
Click **OK** to complete the addition of a **Speed Dial** entry.

Remove - Removes a selected entry from the **Speed Dial** List.

Edit - Allows the modification of either the name or number (or address) of a selected **Speed Dial** entry.

Close - Closes the **Dial** screen, saving the current entries in the **Speed Dial** List.

If this Warning screen appears, an invalid IP Address has been entered. Please correct the IP Address and try again.



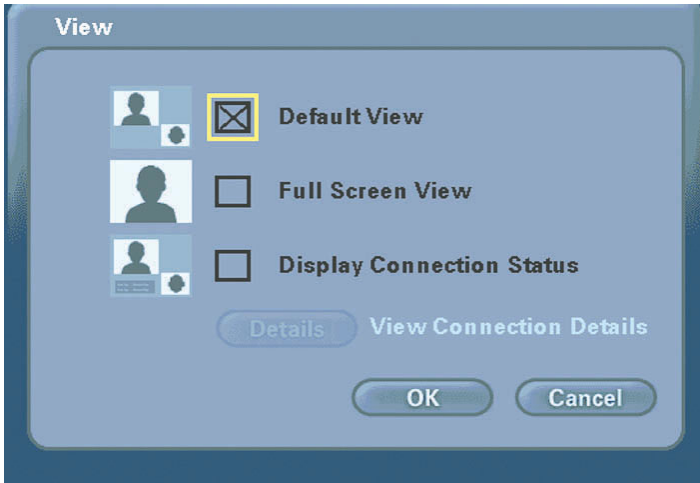
Warning

An invalid IP Address was supplied. Correct the IP Address and try again.

Yes No

Using the Configuration Menu (continued)

Main Screen > View



The View screen allows the user to modify what the main screen may look like.

Default View -



This is the standard view showing both the larger main view window and the smaller self-view window.

Full Screen View -



The main video window is seen in this view. When no call is in progress, the self-view will display. Once a call is connected, the remote caller's video will display as well as a self-view picture-in-picture.

Display Connection Status -



This view is the same as the default view with the addition of connection status information appearing in the lower left corner of the main screen.

Details (Button) View Connection Details -

Click this button to view the connection details. Items such as video and audio formats and call rates will be displayed. The connection details can be viewed only while the DVC-1000 VideoPhone is on a call.

Using the Configuration Menu (continued)

Main Screen > Settings

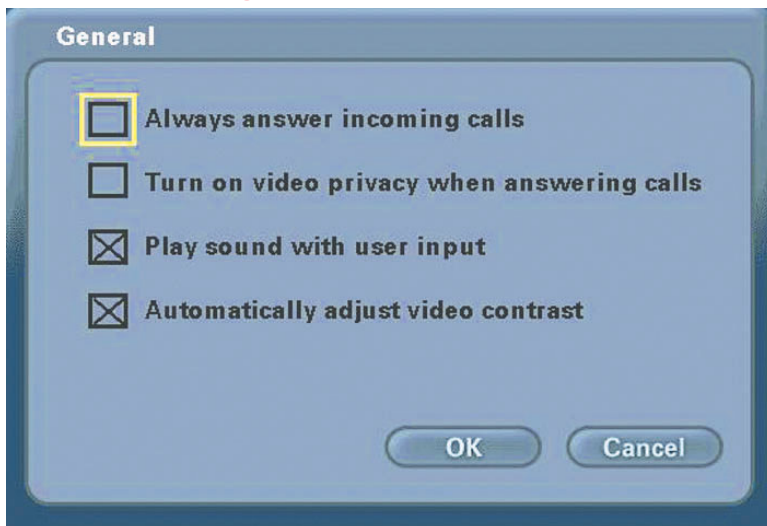


The **Settings** screen contains four buttons that allow the application to be customized in different ways. Each of these settings are detailed starting on the next page.

- General -** Controls settings that adjust the way you view, listen and use the DVC-1000 VideoPhone.
- Personal Information -** Contains information about the user and edits user information.
- Network -** The Network Settings screen has four buttons that allow you to set up your network address, DNS address, public IP Address, as well as the desired network speed.
- Update -** DVC-1000 will look for system updates each time it starts up. This setting allows you to search for an update manually.
- Close -** Closes the Settings Screen and returns you to the Main screen.

Using the Configuration Menu (continued)

Main Screen > Settings > General



Always answer incoming calls -

Select this checkbox to allow the DVC-1000 to automatically accept any incoming call. If this checkbox is not selected and a call is received, a dialog will appear that will ask if the receiver wants to accept the incoming call. When this checkbox is selected, the incoming call will be answered without any ring.

Turn on video privacy when answering calls -

When this checkbox is selected, Video Privacy will be turned on whenever a call is received. This would block the caller from seeing the receiver of the call until the receiver turns off the Video Privacy feature.

Play sound with user input -

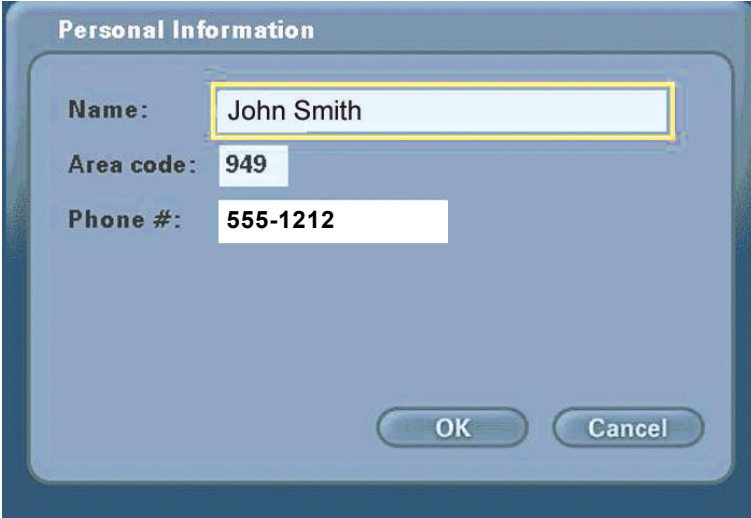
Select this checkbox to hear a beep with each function pressed on the remote control. You will hear no sound when using the remote control if this is not selected.

Automatically adjust video contrast -

Select this checkbox to specify automatic adjustment of the video contrast. When the checkbox is selected, the video contrast is automatically adjusted every 30 seconds. The **Contrast button** on the remote control triggers an adjustment of the video contrast regardless of the selection state of the checkbox.

Using the Configuration Menu (continued)

Main Screen >Settings > Personal Information



Personal Information

Name: John Smith

Area code: 949

Phone #: 555-1212

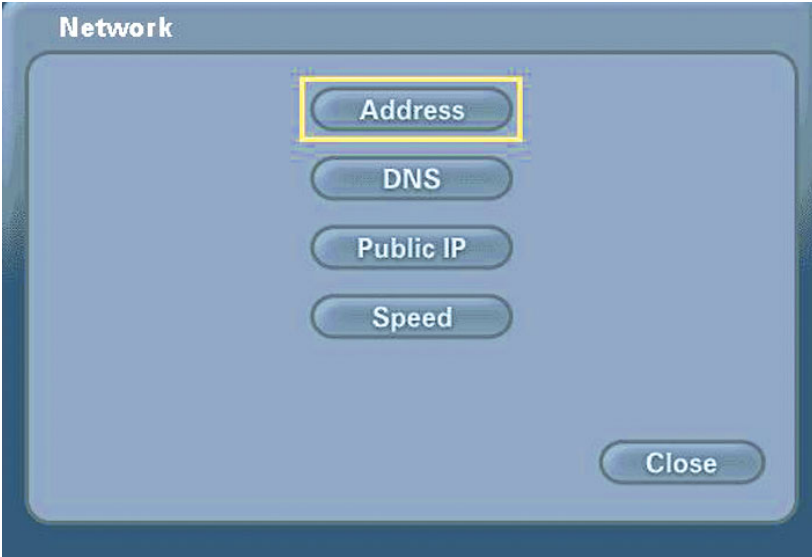
OK Cancel

Name- Enter your name here. When a call is placed from your VideoPhone, the name you enter will be displayed as a Caller ID on the remote end of the call. Unless the VideoPhone you call has auto-answer turned on, the party you wish to call will decide whether or not to accept your call based on this name.

Area Code & Phone # - The number is one you create for friends, family, and others to call you. This is not associated with your home phone, though you may wish to use your home phone number to make remembering the number easier. Or you may make up a new one. This phone number will not be visible to any other users.

Using the Configuration Menu (continued)

Main Screen > Settings > Network



Address

Controls how the DVC-1000 obtains an IP Address.

DNS

Allows you to enter a primary and secondary DNS address.

Public IP

This screen controls how a Public IP Address is obtained. If the Public IP button is “greyed out” it means that your network is unable to obtain an IP Address. Please see #17 in the Troubleshooting section in this manual for more information.

Speed

Allows for setting a speed that best matches your current connection.

Using the Configuration Menu (continued)

Main Screen > Settings > Network > Address

Network Address

Obtain an IP address automatically

IP address: 192.168.0.100 To enter a ",", use the * key on the remote control.

Subnet mask: 255.255.255.0

Gateway: 192.168.0.1

Host name (optional):

OK Cancel

Obtain an IP Address automatically -

The DVC-1000 VideoPhone will attempt to obtain the IP Address from the DHCP server. When this is checked (the default), the other settings on this screen are automatically grayed.

IP Address - Subnet mask - Gateway -

These are all Internet settings that need to be provided by your router configuration settings, ISP or network administrator. These will be grayed if the checkbox (above) is checked.

Host name (optional) -

Used for reporting the host name to the router/home gateway in the DHCP table. This is rarely used and is optional.

*When this screen appears, Click **OK** to save the changes and restart the system.*

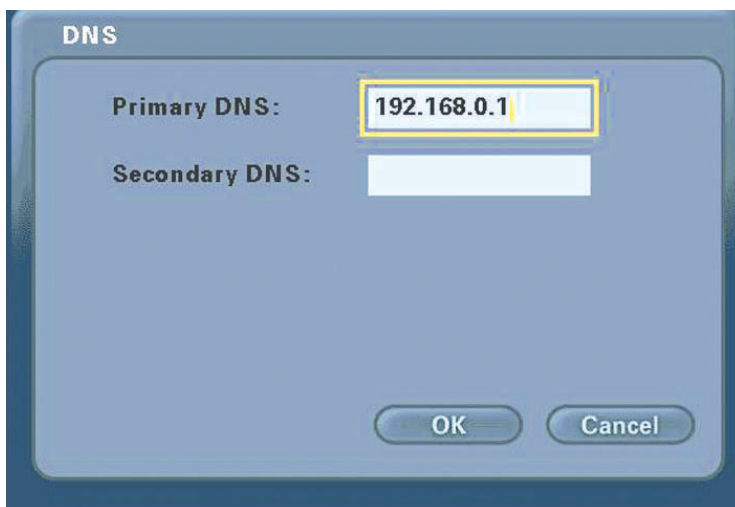
Warning

These changes will cause the system to restart. Do you wish to continue?

Yes No

Using the Configuration Menu (continued)

Main Screen > Settings > Network > DNS



The screenshot shows a 'DNS' configuration window. It has a title bar 'DNS' and two input fields. The 'Primary DNS:' field contains the IP address '192.168.0.1' and is highlighted with a yellow border. The 'Secondary DNS:' field is empty. At the bottom, there are two buttons: 'OK' and 'Cancel'.

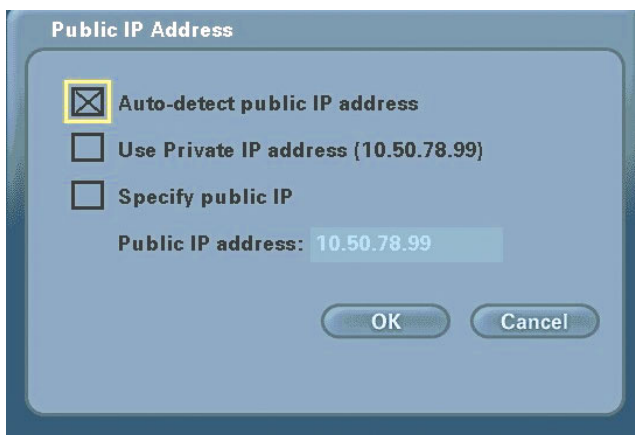
Primary DNS - Enter the Primary Internet DNS (Domain Name System). These are Internet server addresses that you should be able to obtain from your router configuration settings, ISP or network administrator.

Secondary DNS Enter the Secondary DNS address if you have one. Though both primary and secondary DNS addresses are preferred, only the primary address is required.

The Domain Name System (DNS) translates Internet domain names (for example www.dlink.com which is easy for people to use and remember) to IP addresses, which are what computers use to find each other on the Internet.

Using the Configuration Menu (continued)

Main Screen > Settings > Network > Public IP Address



This screen allows you to configure, view, or edit the VideoPhone's public IP Address.

If you are sharing a broadband connection with another device (such as a PC), you typically will need a router to accomplish the sharing of the connection. Your router will usually have a Network Address Translation (NAT) mode installed. The NAT affects the IP address of the DVC-1000 and any other devices sharing your Internet Connection.

See the glossary on page 44 for a description of a NAT.

Auto-detect public IP Address -

This is the default and recommended setting. If the DVC-1000 is behind a NAT, and you leave this checkbox selected, the VideoPhone will automatically use your public IP Address for placing and receiving calls. On the majority of Cable and DSL broadband systems leaving this checked will result in simplified installation and use.

Use Private IP Address -

(Optional) Select this checkbox if you want to use your VideoPhone within a private network (LAN). If your IP Address is private, the VideoPhone will not be able to place or receive calls outside the private network.

Specify public IP-

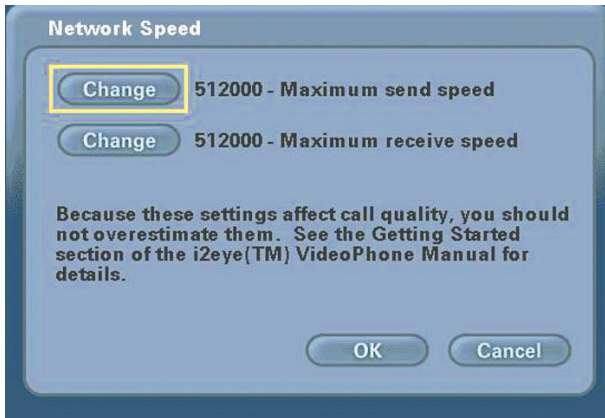
(Optional) Select this checkbox if you want to manually change the DVC-1000 VideoPhone's public IP Address.

Public IP address-

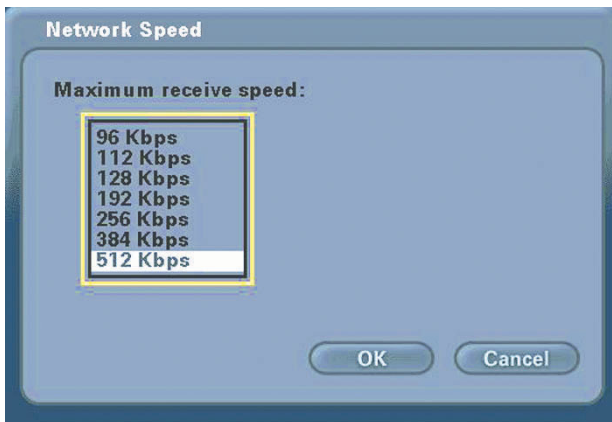
Using the number pad on the remote or the on-screen keyboard, enter the public IP Address. (Only available when **Specify public IP** is selected.)

Using the Configuration Menu (continued)

Main Screen > Settings > Network > Network Speed



The **Network Speed** screen offers you the option of selecting the speed that is the best match for your current network or connection.

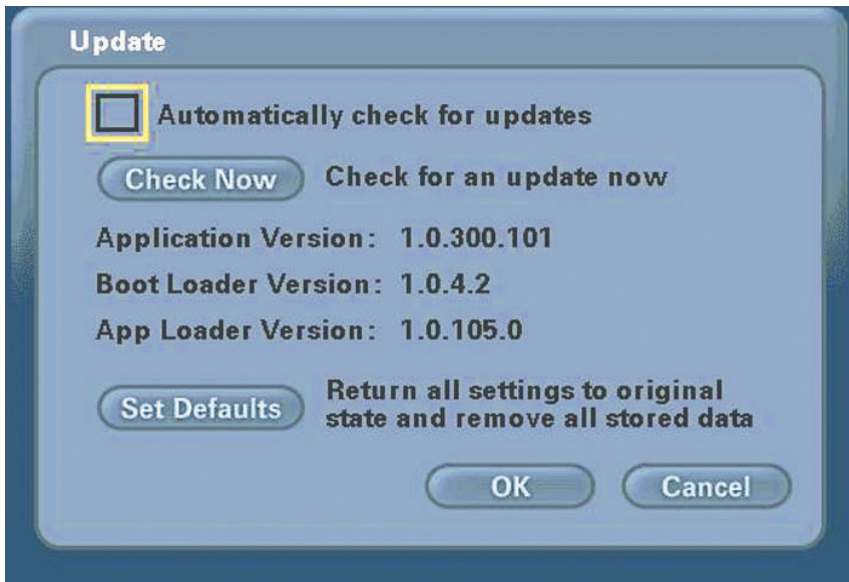


Change the settings by selecting the send or receive **Change** button and select the value desired by moving the selection up or down in the list box.

Overestimating these settings may affect the call quality and is therefore not recommended. Contact your ISP, network administrator, or look in your modem manual for correct values. The send and receive settings can be different speeds. Typically Cable and DSL modems receive at a higher speed and send at a lower speed.

Using the Configuration Menu (continued)

Main Screen > Settings > Update



The Update screen has several functions:

- 1 Set the checkbox to automatically check for updates of the DVC-1000 VideoPhone.
- 2 Check for an update right now.
- 3 Display the current version information.
- 4 **Set Defaults** will restore all settings to factory defaults. This will erase all speed dial entries that have been added.

If you select **Check Now for an Update** then the DVC-1000 will check for an update. If an update is found the following message will appear.



Clicking **YES** will begin an update of the firmware in the DVC-1000. A restart of the DVC-1000 is required after the update is complete.

Using the Configuration Menu (continued)

Main Screen > Privacy



Audio Privacy -

Audio Privacy prevents the audio on your side from being sent to the remote caller. No one on the other end of the VideoPhone call will be able to hear you if this setting is checked, although they can see you.

Video Privacy -

Video Privacy keeps your video from being sent to the remote caller. The person on the other end of the videoconference call will not be able to see you if this setting is checked.

Do not Disturb -

This setting will keep a caller from being able to connect with your VideoPhone. When a caller tries to connect with you, they will receive a message indicating that you are unavailable.

Using the DVC-1000 with Routers, Gateways and Broadband Modems

The D-Link DI-614+ and the DI-604 Routers have a firmware upgrade that allows for easy configuration of the **i2eye**. With the DI-614+, DI-604 and the firmware upgrade, you will not need to manually configure the ports. If you have other Routers or you are having difficulty with the **i2eye**, please read the information on page 34 - page 38 to learn how to open ports on routers.

The screenshot shows the configuration utility for a D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The interface includes a navigation menu on the left with options like Virtual Server, Applications, Filters, Firewall, DMZ, and Performance. The main content area is titled 'Special Application' and contains the following configuration fields:

- Special Application** (Enabled/Disabled): Enabled Disabled
- Name**: D-Link DVC-1000 (with a Clear button)
- Trigger Port**: 1720 - []
- Trigger Type**: TCP (dropdown)
- Public Port**: 15328-15333
- Public Type**: Both (dropdown)

Below the configuration fields is a 'Special Applications List' table with columns for NAME, Trigger, and Public. The 'D-Link DVC-1000' entry is highlighted in yellow and has its checkbox checked.

NAME	Trigger	Public	
<input type="checkbox"/> Battle.net	6112	6112	[] []
<input type="checkbox"/> Dialpad	7175	51200-51201,51210	[] []
<input type="checkbox"/> ICU II	2019	2000-2038,2050-2051,2069,2085,3010-3030	[] []
<input type="checkbox"/> MSN Gaming Zone	47624	2300-2400,28800-29000	[] []
<input type="checkbox"/> PC-to-Phone	12053	12120,12122,24150-24220	[] []
<input type="checkbox"/> Quick Time 4	554	6970-6999	[] []
<input checked="" type="checkbox"/> D-Link DVC-1000	1720	15328-15333	[] []

At the bottom right of the list are buttons for 'Apply', 'Cancel', and 'Help'.

In the DI-614+ configuration utility, go to the **Advanced>Applications** screen and check the **D-Link DVC-1000** box in the **Special Applications** list. No other port configuration is needed with the D-Link DI-614+ and DI-604 with the firmware upgrades.

Using the DVC-1000 with Routers, Gateways or Broadband Modems (continued)

Opening Ports on Your Routers and Gateways

The firewall security features built into most routers and gateways prevent users from accessing the video and audio of their DVC-1000.

A router connects to the Internet through a series of numbered ports. The ports used by the DVC-1000 are blocked from access over the Internet by the firewall features of the router.

You need to open the ports on your router to the Internet to allow access to the DVC-1000.

The router or gateway that you are using may be different from the example shown on the following pages. However, the general procedure for opening ports will be similar. (If you do not have a D-Link router, look for *Virtual Server*, *Firewall Rules*, *Port Forwarding*, *Advanced* or *Firewall* in your router's configuration utility.)

In the example that follows we begin by opening the Web configuration utility and going to **Advanced > Virtual Server**.

Follow the steps on the next 2 pages to open the ports on your router for successful operation of the DVC-1000.

Using the DVC-1000 with Routers, Gateways or Broadband Modems (continued)

Opening Ports on Your Routers and Gateways (continued)

How to open ports on a router

Virtual Server

Virtual Server is used to allow Internet users access to LAN services.

A Enabled Disabled

Name **B** i2eye

Private IP **C** 192.168.0.101

Protocol Type **D** Both

Private Port **E** 153258

Public Port **E** 153258

Schedule **F** Always

From time 00 : 00 AM to 00 : 00 AM

day Sun to Sun

G

Virtual Servers List

Name	Private IP	Protocol	Schedule
<input type="checkbox"/> i2eye	192.168.0.101	TCP 1720/1720	always
<input type="checkbox"/> i2eye	192.168.0.101	IP (O) 15328/15328	always
<input type="checkbox"/> i2eye	192.168.0.101	IP (O) 15329/15329	always

Apply Cancel Help

A total of 7 ports must be opened for the DVC-1000 to work with most routers or firewalls. To open these ports, please do the following:

- A.** Click **Enabled**
- B.** Give the Virtual Server a **Name** (such as i2eye)
- C.** Under **Private IP**, enter the IP Address obtained from the DVC-1000

(How to obtain an IP Address from the DVC-1000: Turn the DVC-1000 ON. Using the remote control highlight the Settings button on the Main Screen. Navigate to Settings>Network>Network Address >IP Address)

- D.** Under **Protocol Type**, choose **Both** (TCP and UDP)
- E.** Under **Private Port** and **Public Port**, enter **153258**
- F.** Under **Schedule**, click **Always**
- G.** Click **Apply** to save this entry

Using the DVC-1000 with Routers, Gateways or Broadband Modems (continued)

Opening Ports on Your Routers and Gateways (continued)

You have now completed the entering of one port to be opened. You will need to open six more ports.

Repeat steps **A** through **G** five more times for each one of the following five ports: 15329, 15330, 15331, 15332 and 15333.

The last port will be opened slightly differently:

- Repeat steps A through C on the previous page.
- Choose TCP as the Protocol Type
- Enter 1720 as the Private Port and Public Port
- Under Schedule, Click Always
- Click Apply to complete

You have now completed the opening of the 7 ports. Your DVC-1000 is ready to use with your router or gateway!

(Important: Not all routers and gateways are the same; please refer to your user manual for specific instructions on opening ports.)

Using the DVC-1000 with Routers, Gateways, or Broadband Modems (continued)

From the following sections, choose the heading that best applies to your equipment or networking configuration.

Network With Multiple Public IP Addresses

A Public IP Address is visible on the Internet. (Most commonly found in business environments.)

Recommended Procedure: If there is an available public IP address, simply enter the IP address, subnet mask, and gateway into the applicable fields under the network settings page. If the network has a DHCP server, select the checkbox under the network settings that says, “Automatically obtain IP address.” (The network administrator will be able to tell you whether or not the network has a DHCP server.)

Potential Issues: Some firewalls are configured in a way that could potentially restrict H.323 data flow. Most current corporate firewalls are H.323 compliant. If this is the case, configuring the firewall is accomplished by simply opening the necessary H.323 ports into the network:

Port 1720 (TCP)
Ports 15328 – 15333 (UDP & TCP)

If your particular firewall does not have this option, consult the firewall’s documentation on how to open specific ports needed for H.323 communications.

Broadband Modem and One PC

(This is the most common scenario found in a home or home office that currently has one PC connected to its broadband modem.)

Recommended Procedure: Request from your ISP an additional public IP address. With a second public IP address, the Video Phone will be visible to the outside world just as the existing PC. The ISP can either assign a static IP address or allow you to dynamically request the IP address via DHCP. Follow the instructions in Broadband Modem Only section, below, depending on what your ISP requires.

Because most broadband modems have only one Ethernet port, it will be necessary to install a hub or switch between the modem and the rest of the network. Using an Ethernet cable, connect the modem’s Ethernet port to the applicable WAN port on the hub. Once that is done, you can plug the PC and DVC-1000 Video Phone into any other available port.

Using the DVC-1000 with Routers, Gateways, or Broadband Modems (continued)

Broadband Modem, Multiple PCs and a Hub

Commonly found in small offices, home offices, or homes with more than one PC where multiple public IP addresses are available.

In order to install the DVC-1000 Video Phone as another device behind a hub assign an available public IP address to the Video Phone.

Refer to the Broadband Modem Only section, below, for detailed installation instructions.

Broadband Modem, Multiple PCs and a Router

Commonly found in small offices, home offices, or homes with more than one PC where only one public IP address is available.

Refer to the Using a Router/Home gateway on the previous page for detailed installation instructions.

Broadband Modem Only

This section applies only in the instance that the broadband connection is used exclusively with the DVC-1000 Video phone and there are no PCs or other devices connected to the broadband modem.)

Recommended Procedure: Many ISPs act as DHCP servers and dynamically assign a public IP address whenever the modem requests one. If your ISP has a DHCP server, select the checkbox under the network settings that says, "Automatically obtain IP address." By choosing this option, you are not required to know the IP address, gateway, subnet mask, or DNS numbers. They will all be filled in automatically.

If DHCP is not an option, all of the networking values will have to be manually entered. Simply enter the public IP address, subnet Mask, gateway, and DNS numbers given to you by the ISP into the appropriate network settings fields.

Potential Issues: In order for the DVC-1000 Video Phone to function properly over the Internet, there must exist a public IP address for the world to see. If your ISP is acting as a NAT and assigning private IP addresses, you will have to request a public IP address in order for your Video Phone to be able to receive calls.

Troubleshooting

1. Cannot make a call using a phone number.

Check that you did not misdial the number. If the person you are calling is outside of your area code, you must dial a “1” before the area code and then the number.

The VideoPhone is not connected to the Internet.

The VideoPhone is not registered with the directory service. It may take the VideoPhone up to 10 minutes to register. Verify all network settings, including DNS.

Far side of the call is not registered with the directory service. If you are calling someone who has an endpoint besides a DVC-1000 VideoPhone, you will have to make direct IP calls to them. If the far side has a DVC-1000 VideoPhone and you cannot connect to them via the directory service, they are probably not registered.

2. Error Message displays on main screen.

VideoPhone could not register with a directory service. Sometimes it takes the VideoPhone up to ten minutes to register. Verify all network settings, including DNS. Check your network settings.

3. Cannot make direct IP calls.

VideoPhone is not connected to the Internet. See the Internet Connection section in this Troubleshooting Guide.

The person you are trying to call is unreachable. Ensure the IP address of the person you are trying to call is correct.

Troubleshooting (continued)

4. Telephone or television produces an off-hook signal.

Telephone is off the hook. Hang up the phone.

5. Telephone or television produces a fast busy signal.

Person you are trying to call is not registered with the directory service. Call the person using direct IP or wait until the person is registered with the directory service.

Person you are trying to call is in a call or has rejected your call. Try your call at a later time.

6. Picking up the phone displays a window with speed dial list or brings up a message about no entries in the speed dial list.

VideoPhone is not registered with the directory service. Sometimes it takes the VideoPhone up to ten minutes to register.

Verify all network settings, including DNS. See Network section for reference.

7. Telephone doesn't ring with an incoming call.

VideoPhone is set for Auto-Answer. If the VideoPhone is set up for Auto-Answer then the phone will not ring with an incoming call. Fix by turning off Auto-Answer via the Settings/General menu.

Telephone is not properly plugged in. Ensure that the phone is properly plugged into the VideoPhone. If the telephone is not self-powered, ensure that it is properly plugged into a power supply. Consult your telephone user manual for reference.

Telephone ringer is off. Make sure the ringer on the phone is turned on. Consult your telephone user manual for reference.

8. VideoPhone freezes-up while answering a call.

VideoPhone is not functioning properly behind a firewall. See next section, "No video in a call" solution.

Troubleshooting (continued)

9. No video in a call.

Video cables are not plugged in correctly. Ensure that your video cables are correctly plugged into the TV. Make sure that the TV is set for video input. Consult your TV manual for reference.

Incorrect network speeds. See Incorrect Network Speeds Section in this Troubleshooting Guide.

VideoPhone is not functioning properly behind a firewall. Place the IP address of the VideoPhone in the DMZ of the firewall. Consult your routers documentation or your network administrator for help on doing this.

Port forward the appropriate ports to the VideoPhone. The VideoPhone needs ports 1720 (TCP) and ports 15328-15333 (TCP and UDP) open to function properly. Consult your routers documentation or your network administrator for help on doing this.

VideoPhone is not functioning properly behind NAT. Go to Settings/Network/Public IP. Press Enter on the remote when the cursor is over “Auto detect public IP Address.” If the VideoPhone is unable to detect the public IP Address, it should be entered manually using “Use specific IP Address.” The VideoPhone’s public IP Address is given to you by either your ISP or network administrator.

10. Poor video in a call.

Camera out of focus. The far site should focus their camera by twisting the knob on the VideoPhone until the image is in focus.

Incorrect Network Speeds. See Incorrect Network Speeds Section in this Trouble Shooting Guide

Excessive motion in the picture you are receiving. A background with less motion provides a better, smoother video picture.

Troubleshooting (continued)

11. Video freezes during a call.

Far side muted their video. If the far side mutes their video you will not be able to see him or her.

Network is congested. Give the VideoPhone a couple of minutes to try to recover, or disconnect the call and try again at a later time.

12. No audio in call.

Audio cables are not plugged in correctly. Ensure that your audio cables are correctly plugged into the TV. Make sure that the TV is set for video input. Check the volume level on the TV. Consult your TV manual for reference.

Telephone is not set-up properly. Plug the telephone into the back of the VideoPhone. If the telephone is powered (cordless) make sure that it is plugged into a power supply. Consult your telephone user manual for reference.

VideoPhone is not functioning properly behind a firewall. Place the IP Address of the VideoPhone in the DMZ of the firewall. Consult your router's documentation or your network administrator for help on doing this.

Port forward the appropriate ports to the VideoPhone. The VideoPhone needs ports 1720 (TCP) and ports 15328-15333 (TCP and UDP) open to function properly. Consult your router's documentation or your network administrator for help on doing this.

Troubleshooting (continued)

VideoPhone is not functioning properly behind NAT. Go to Settings/Network/Public IP. Select “Auto detect public IP Address.” If the VideoPhone is unable to detect the public IP Address, it should be entered manually using “Use specific IP Address.” The public IP Address is given to you by either your ISP or your network administrator.

Incorrect network speeds. See the **Incorrect Network Speeds** section in this **Troubleshooting Guide**

Volume is adjusted incorrectly. You can adjust the volume on the TV as you would when watching a television show. You might also be able to adjust the volume on your telephone. Consult your TV and/or telephone user guide for support.

13. Audio stops during a call.

Far side muted their audio. If the far side mutes their audio you will not be able to hear him or her.

Network is congested. Give the VideoPhone a couple of minutes to try to recover, or disconnect the call and try again at a later time.

14. Audio has a echo.

Far side television is too loud. The far side television volume needs to be turned down.

15. Excessive delay during a conversation.

Incorrect network speed settings (too fast). Decrease the send/receive speeds and attempt the call again.
(Settings|Network|Speed)

Troubleshooting (continued)

16. Error Displays on main screen.

VideoPhone cannot obtain public IP Address (Router's address). See "VideoPhone cannot obtain IP Address automatically" section below.

17. VideoPhone cannot obtain IP Address automatically

Not properly connected to a DHCP server. Check connection to LAN, by verifying a link light on the back of the VideoPhone. Make sure that the router is set-up for DHCP. Consult either your router's user manual for reference or your network administrator.

IP Address is not accessible to the VideoPhone. Need to statically assign an IP Address, subnet mask, gateway and DNS values. These values will be given to you either by your ISP or your network administrator. If the VideoPhone is on a private network consult your router's user manual or network administrator.

Modem not enabled to assign more than one private IP (This is common in DSL environments) Reset modem. Once booted, connect the VideoPhone and allow the DHCP function to assign an IP.

18. Public IP button is not enabled.

VideoPhone hasn't been able to detect IP Address yet.

The VideoPhone can take up to ten minutes to auto detect the public IP Address. Be sure you wait long enough. Also check the DNS settings in the Network>DNS screen.

19. VideoPhone reports packet loss.

Incorrect Network Speeds. See Incorrect Network Speeds section in this **Troubleshooting Guide**.

Network line is congested. If the packet loss is from one to six percent it will probably be due to network congestion. The VideoPhone will be able to recover.

Troubleshooting (continued)

20. VideoPhone is not connected to the Internet.

Ethernet cable is not properly plugged into the VideoPhone. Ensure that the RJ-45 cable is properly plugged into the back of the VideoPhone. A steady green light on the Ethernet port indicates a valid link has been made.

Invalid DNS entries. The VideoPhone requires at least one valid DNS entry. Consult your ISP or network administrator for the DNS IP Addresses.

Invalid IP, subnet mask and/or gateway. All three of these values have to be correct for the VideoPhone to function properly. Recheck all of these values. Consult your ISP or network administrator for these values.

21. Incorrect Network Speeds.

Incorrect entries for network speed. Consult your ISP or network administrator to verify the correct send and receive speeds for your VideoPhone.

Incorrect entries for network speed. While in a call, turn on **Connection Status** via the View Menu. If the VideoPhone is reporting packet loss, decrease your receive speed until the VideoPhone reports zero percent packet loss. If you are not reading any packet loss, increase your download speed, to the point where you do not report packet loss. The far side might need to increase their upload speed to be greater than or equal to your download speed.

Troubleshooting (continued)

22. VideoPhone does not boot up.

Video is not being displayed on television.

Ensure that the video and audio cables are plugged in correctly to both the VideoPhone and television. The television should be set for video input. Consult your television user manual for support.

The VideoPhone doesn't have power or is not turned on.

Ensure that the AC adapter is plugged into an outlet and the other end is plugged into the VideoPhone. The switch on the back of the VideoPhone must be set to 1 to power on.

Not enough time given to finish booting.

The boot up process could take several minutes. Be sure you wait long enough. If the VideoPhone still doesn't boot up, turn it off for one to two minutes and then turn it back on.

23. Error Displays on Main Screen.

Unable to find an Update Server.

No Internet connection.

Update Server is unavailable.

Local setting may be incorrect.

Firewall not allowing FTP out.

In all these cases, contact your System Administrator.

Frequently Asked Questions

1 What is D-Link's i2eye?

i2eye (TM) is a breakthrough communications video appliance that provides IP videoconferencing and connects to any standard television. Simple to install and use, the small unit sits on top of the television and contains a video camera that can stream up to 30 frames per second over the Internet to friends, family and business associates.

2 When connecting my DVC-1000 behind a router or firewall, what ports do I need to open?

The VideoPhone needs ports 1720 (TCP) and ports 15328-15333 (TCP and UDP) open to function properly. Consult your router's documentation or your network administrator for help on doing this. Check the D-Link Tech Support website for more information regarding specific ports to open on your D-Link routers.

3 I've seen videophones that connect using the phone line, and the picture is always small and choppy. How is i2eye different?

i2eye connects over high-speed broadband, and it delivers up to 30 frames per second. Videophones using a slow analog *plain old telephone* line can't deliver smooth video pictures over their small LCD display. They show what appears to be a series of still pictures rather than full motion video

4 What is the D-Link LDAP Directory Service?

The D-Link LDAP Directory Service is a D-Link hosted server which will allow you to register a "phone number" with your DVC-1000 VideoPhone. When someone with a DVC-1000 dials this "phone number", your DVC-1000 will ring and you will be able to accept a call. In the same manner you can call others by dialing their "phone number". This allows you to contact another DVC-1000 without knowing it's IP address. All DVC-1000 which are connected to a broadband modem will have the capability of using the D-Link LDAP Directory Service.

5 Can I use the DVC-1000 with a computer and monitor instead of a TV?

Yes. The DVC-1000 can be used with a computer and monitor instead of a TV. However, you will need a TV Tuner / Video Capture device or a video card that accepts video input from an RCA jack.

Frequently Asked Question (continued)

6 How large will the image be?

As large as the TV screen. **i2eye** supports three screen formats. The first is a picture-in-picture mode that has the incoming video covering about half the television screen and the outbound video in a smaller window. The second is full screen mode. This mode displays the incoming video across the entire television screen. The third is connection status mode. This mode displays the picture-in-picture mode and gives you an idea of the upload and download speed.

7 Can I use the DVC-1000 with a non-D-Link directory service?

No. The DVC-1000 is designed to automatically connect to the D-Link Directory Service. This is a free service and is available to anyone with a DVC-1000. The Directory Service allows for calling another DVC-1000 Videophone by using a phone number instead of using an IP Address.

8 Do I need a PC to use i2eye?

i2eye is a complete standalone system that handles all the communications, so you don't need a PC. Just connect it to the TV and broadband connection and go. You can also use it with any PC with video input capabilities.

9 Can I connect i2eye without wires?

Yes, there is an optional DWL-810+ device that allows you to configure your complete system without wires (note: you need a wireless router or access point). The DWL-810+ bridges from i2eye's wired Ethernet connection to the AirPlus wireless router or access point that is connected to the cable or DSL modem.

10 How easy is i2eye to setup?

Very easy. When users first turn on i2eye they will be walked through a Set-up Wizard that is designed to get the videophone up and working quickly. The wizard asks for the information needed to connect to a broadband Internet connection. Once the information is sent, i2eye will connect to the D-Link i2eye server. The server will assign a 10-digit "Internet telephone number" to the device. It will not be necessary to work with cumbersome IP addresses when you want to communicate using the i2eye.

Frequently Asked Question (continued)

11 What devices can I connect to with the DVC-1000?

With the DVC-1000 you can connect to any hardware or software that is H.323 compatible. If you are not sure if your hardware or software is H.323 compatible, please contact the manufacturer/developer. If you are using a PC with a Windows operating system, you can use NetMeeting with any webcam to connect to the DVC-1000. NetMeeting is a common H.323 compatible software application.

*Note: The DVC-1000 does not support SIP.

12 What standards drive i2eye?

i2eye is based on the H.323 industry standard video streaming over IP protocol. This ensures that any H.323 compliant device will communicate together seamlessly. i2eye is a broadband appliance that draws from D-Link's sixteen years of experience as a leading Ethernet manufacturer.

13 Do I have to take every call?

i2eye's configuration menu provides settings for three types of privacy: **Audio Privacy**, **Video Privacy**, and **Do Not Disturb**, so you are in control.

When the Audio Privacy is activated, incoming callers will be able to see video from your end, but not hear you. When the Video Privacy is activated, incoming callers will be able to hear audio from your end, but not see you. And when Do Not Disturb is activated, incoming callers will receive a message indicating that you are not available.

Glossary of Terms

Bandwidth: A measure of the rate at which data can be sent through the network. This value is usually given in bits per second (bps) or kilobits per second (kbps).

CIF (Common Intermediate Format): An intermediate video format. When D-Link DVC-1000 video is transmitted over a network, the sizes will be CIF, QCIF, or SQCIF. The VideoPhone will default to CIF. CIF resolution is 352 x 288.

DHCP (Dynamic Host Configuration Protocol): A protocol that network devices use to obtain an IP address, subnet mask, gateway and DNS addresses automatically. A DHCP server can be a router, ISP server, or PC running Internet connection sharing. See Static IP address.

Directory Service: A service that allows users to make video conferencing calls with telephone numbers. It does this by correlating telephone numbers to actual public IP addresses.

DNS (Domain Name System): A system used to translate computer names into IP addresses. For example, a DNS server would translate www.dlink.com into 192.152.81.1

DSL (Digital Subscribers Line): A technology that delivers digital information at a high speed through a user's telephone line. The most common DSL is ADSL (Asymmetrical Digital Subscribers Line) where the download speed is usually much higher than the upload speed.

Ethernet: The port on the back of the DVC-1000 VideoPhone that is used to send and receive data over a network.

Far side: The remote connection of the videoconference. Your connection is the Local Connection.

Firewall: A security mechanism placed between networks, which restricts certain types of data to devices behind the firewall.

H.323: Standard defining videoconferencing over the Internet.

Glossary of Terms (continued)

Home Gateway: A term commonly interchanged with router.

IP Address (Internet Protocol Address): An IP Address is a number that identifies a computer connected to the Internet. Every computer that is connected to the Internet must have a unique IP Address. An IP Address consists of four sections separated by periods. Each section contains an 8-bit value represented as a number ranging from 0 to 255.

Public IP Address: An IP Address that is not behind a NAT. This IP Address is visible from the Internet.

Private IP Address: An IP Address that is behind a NAT, which is not visible to the Internet. The preferred ranges for private IP Address are either 192.168.x.x or 10.0.0.x.

Dynamic IP Address: An IP Address for a particular network device (PC, VideoPhone, router) that is dynamically assigned by a router or ISP and will not remain the same from session to session. See DHCP.

Static IP Address: An IP Address for a particular network device (PC, VideoPhone, router) that doesn't change. See DHCP.

ISP (Internet Service Provider): A commercial organization that provides subscribers with access to the Internet.

LAN (Local Area Network): A network that is designed to span small distances. These are most commonly used in small buildings, businesses and homes with multiple PCs. See WAN.

NAT (Network Address Translation): A technology that allows multiple network devices to share the same IP Address. NAT devices forward all incoming and outgoing information to the correct network devices. Most NAT devices have firewall capabilities.

QCIF (Quarter Common Intermediate Format): An intermediate video format. QCIF resolution is 176x144. The DVC-1000 VideoPhone will send QCIF-sized video only if the remote endpoint cannot decode CIF.

Glossary of Terms (continued)

QoS (Quality of Service): Allows guaranteed bandwidth and packet delivery between network devices over a network.

Router: A device that attaches two or more network devices and forwards data accordingly. Most consumer type routers act as DHCP servers, NATs and simple firewalls.

DMZ (Demilitarized Zone): Devices set up to be in the router's DMZ will see all network traffic.

Port Forwarding: The router will forward public-side incoming information to a specified device on the private side. The router will forward only the data that is received on the specified ports. This is usually set through the advanced settings in the router's web interface. Also known as **Virtual Server** or **Firewall Rules**.

Ports: A port is a specified path in which data travels. Each type of data that is transmitted over the Internet travels down a specified port. A router will forward information from one port to another, and a firewall will open only a specified number of ports.

SQCIF (Subquarter Common Intermediate Format): An intermediate video format. SQCIF resolution is 128x96. The DVC-1000 VideoPhone will send SQCIF-sized video only if the remote endpoint cannot decode CIF or QCIF.

SLIC (Subscriber-Line Interface Circuit): Provides a phone's analog dial tone, busy tone, dual-tone multiple-frequency (DTMF) generation and decoding, caller ID and ring-signaling functions. The SLIC allows the DVC-1000 to work with a standard telephone without connecting to the phone system.

TCP (Transmission Control Protocol): An Internet protocol used by the DVC-1000 VideoPhone in addition to UDP.

UDP (User Datagram Protocol): The Internet protocol most commonly used by the DVC-1000 VideoPhone to send and receive audio and video data.

WAN (Wide Area Network): A network that is designed to span large distances. See LAN.

Technical Specifications

Internal Processor

ARM-9 ASIC Communication Processor

Standards Compliant

ITU H.323 (IP communications)

Video: H.263

Audio: G.711, G.723

Data Rates/Frame Rates

96 Kbps—512 Kbps

Up to 30fps

Video

Up to 30fps CIF (352 x 288 pixels), QCIF (176 x 144)

Picture-In-Picture (PIP)

Automatic brightness control

DVC-1000 Robust Video

Audio

Telephone interface- Full Duplex Audio

Echo cancellation

Voice only to and from Voice over IP endpoints

Half-duplex speakerphone

Input/Output

Power

Audio Out

Video Out (NTSC)

10BaseT Ethernet (RJ-45)

SLIC for telephone

External Microphone

Camera

Manual tilt

Manual focus

LED Indicators

Power

Status

Video monitor

Network link and transmit

Technical Specifications (continued)

User Interface

- Dialing
- Diagnostics
- Quality of service measurement
- Manual or auto answer
- Incoming Caller ID
- Privacy shutter via video mute and/or audio mute
- Do Not Disturb mode
- Answer using infrared remote control or the telephone

Dialing Capabilities

- Speed dial list with ten entries
- Manual dialing with telephone handset using Directory Service
- Manual dialing with direct IP entry

Remote Software Update

- Software update, automatic or manual

Network Requirements

- IP-based network including Ethernet, Token Ring, Cable, DSL, Frame, FDDI, T-1 and ATM LAN
- Fixed IP with subnet mask, DNS and gateway or DHCP

Physical

- DVC-1000 VideoPhone: height x depth x width
1.50" (38mm) x 6.08" (155mm) x 8.07" (205mm)
- Weight:
14 oz. (.398kg)

Electrical

- Power supply:
Auto-switching 2 Amp; 5.0 Volt output

Patent Pending

Contacting Technical Support

Technical Support

You can find the most recent software and user documentation on the **i2eye** website.

D-Link provides free technical support for customers within the United States and Canada for the duration of the warranty period on this product.

U.S. and Canadian customers can contact **D-Link** technical support through our web site or by phone.

Tech Support for customers within the United States:

D-Link i2Eye Technical Support over the Telephone:

(800) 93-i2EYE

24 hours a day, seven days a week

D-Link Technical Support over the Internet:

<http://www.i-2-eye.com>

email: support@i-2-eye.com

Tech Support for customers within Canada:

D-Link Technical Support over the Telephone:

(800) 361-5265

Monday to Friday 8:30am to 9:00pm EST

D-Link Technical Support over the Internet:

<http://support.dlink.ca>

email: support@dlink.ca

Warranty and Registration

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. (“D-Link”) provides this Limited warranty for its product only to the person or entity that originally purchased the product from:

- D-Link or its authorized reseller or distributor and
- Products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, addresses with an APO or FPO.

Limited Warranty: D-Link warrants that the hardware portion of the D-Link products described below will be free from material defects in workmanship and materials from the date of original retail purchase of the product, for the period set forth below applicable to the product type (“Warranty Period”), except as otherwise stated herein.

1-Year Limited Warranty for the Product(s) is defined as follows:

- Hardware (excluding power supplies) One (1) Year
- Power Supplies One (1) Year
- Spare parts and spare kits Ninety (90) days

D-Link’s sole obligation shall be to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund at D-Link’s sole discretion. Such repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement Hardware need not be new or have an identical make, model or part. D-Link may in its sole discretion replace the defective Hardware (or any part thereof) with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement Hardware will be warranted for the remainder of the original Warranty Period from the date of original retail purchase. If a material defect is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to repair or replace the defective Hardware, the price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware (or part thereof) that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

Limited Software Warranty: D-Link warrants that the software portion of the product (“Software”) will substantially conform to D-Link’s then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days (“Warranty Period”), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. D-Link’s sole obligation shall be to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link’s functional specifications for the Software or to refund at D-Link’s sole discretion. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Software will be warranted for the remainder of the original Warranty Period from the date of original retail purchase. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty: The Limited Warranty provided hereunder for hardware and software of D-Link’s products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold “As-Is” without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

Submitting A Claim: The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow D-Link to confirm the same.
- The original product owner must obtain a Return Material Authorization (“RMA”) number from the Authorized D-Link Service Office and, if requested, provide written proof of purchase of the product (such as a copy of the dated purchase invoice for the product) before the warranty service is provided.
- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the Product and will not ship back any accessories.
- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery (“COD”) is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer and shipped to **D-Link Systems, Inc., 53 Discovery Drive, Irvine, CA 92618**. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link, with shipping charges prepaid. Expedited shipping is available if shipping charges are prepaid by the customer and upon request.

D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link’s reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

What Is Not Covered: This limited warranty provided by D-Link does not cover: Products, if in D-Link’s judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product. Repair by anyone other than D-Link or an Authorized D-Link Service Office will void this Warranty.

Disclaimer of Other Warranties: EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED “AS-IS” WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO NINETY (90) DAYS. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

Limitation of Liability: TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK’S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NON-CONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY

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CE Mark Warning: This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC Statement: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Register your D-Link product online at <http://www.i-2-eye.com>

(02/28/2003)